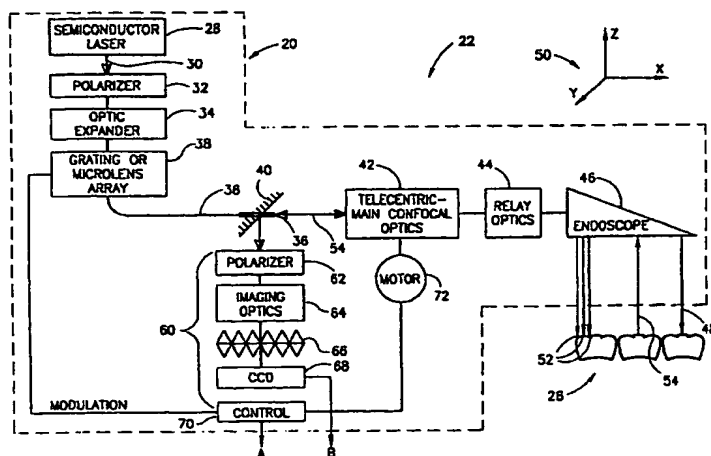




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(54) Title: IMAGING A THREE-DIMENSIONAL STRUCTURE BY CONFOCAL FOCUSING AN ARRAY OF LIGHT BEAMS



(57) Abstract

Determining surface topology of a portion (26) of a three-dimensional structure is provided. An array of incident light beams (36) passing through a focusing optics (42) and a probing face is shone on said portion. The focusing optics defines one or more focal planes forward the probing face in a position which can be changed (72) by the focusing optics. The beams generate illuminated spots (52) on the structure and the intensity of returning light rays propagating in an optical path opposite to that of the incident light rays is measured (60) at various positions of the focal plane(s). By determining spot-specific positions yielding a maximum intensity of the returned light beams, data is generated which is representative of said topology. Measurement of teeth. Light beams by grating of matrix of pinholes, micro lens array. Simultaneous imaging from three angles. Quicker with three different light components.